



RID Rotor Interference Detection

The Rotor Interference Detection (RID) system can be installed to minimise damage to the rotary valve and warn of possible contamination of the conveyed product in the unlikely instance of the rotor fouling the valve body or end covers.

DMN-WESTINGHOUSE valves are produced with the highest accuracy and rotor movement is not likely to occur. However, should the rotor become damaged due to foreign objects passing through the valve, movement is possible. In that case the rigid and simple design of the RID ensures problem free operation.

User friendly

Regardless if the RID system is employed on an easy detachable valve with or without supporting rails, our valve remains easy detachable. As the rotor contact point is on the drive side, no further disassembly is required when the valve is opened for cleaning or further inspection.

Design

By isolating the rotor from the body and end covers, the electrical resistance can be monitored. When a change in resistance takes place due to contact, this will be signalled and the drive should immediately be stopped.

The direct drive execution is isolated by the coupling which has a plastic spider. The chain drive is isolated from the motor base plate and the body.

The contact points for electrical connection are at the drive end and on the end cover / body. This monitoring is done with an isolated switch amplifier. This will give an instant output signal in case of any contact between the rotor and the body or end covers and has a fail safe monitoring. The amplifier will be supplied separately.

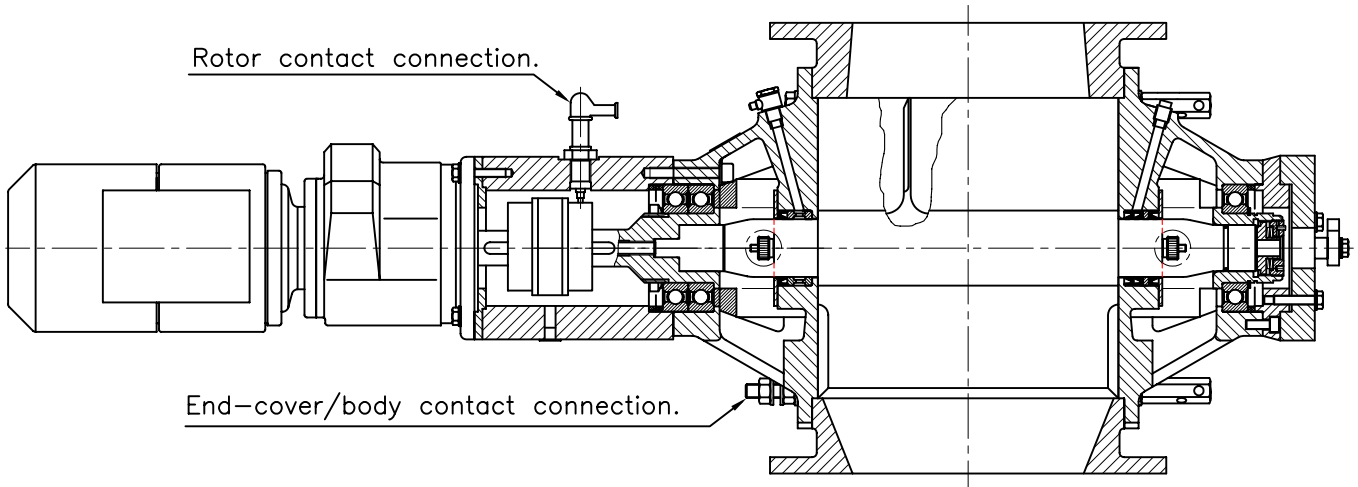
Quality

The RID system is a very simple make or break connection. In effect the rotor is insulated from the rest of the valve and if and when the rotor touches the casing, contact is made which is relayed to the system control. And that is all it is. DMN do this by using high quality electrically insulated hybrid bearings which also have several other advantages.

The present rotor detection systems normally gives a signal when a rotor has fouled the body or end covers, in effect after the fact. In all honesty this type of system, **like all others on the market**, can be susceptible to malfunction. This can be caused by a conductive product or pre-metal contaminated product passing through the valve and possibly making contact between the rotor and casing. In either case this will result in a signal which, depending on how the system has been integrated, could cause the production process to be halted.

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We use Ceramic Hybrid Bearings on AL/BL size 150 up to 250 and for size 300–350 bearing with electrically insulating coating on the external surface of the outer ring. There are no plastic parts to isolate the rotor.



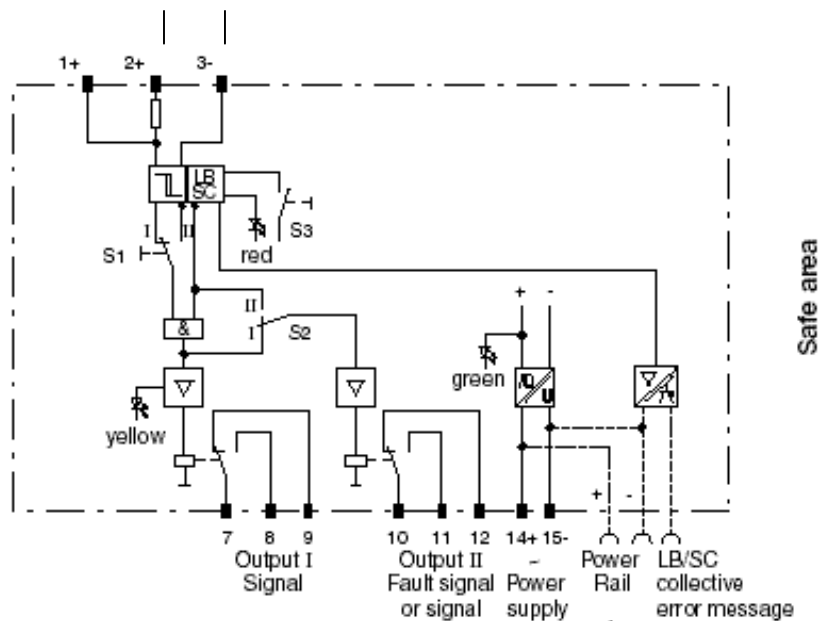
Operation

The rotor is electrically isolated from valve body, end covers and drive. The supplied Pepperl & Fuchs Isolated switch amplifier Type KFD2–SR2–Ex1.W.LB will give a instant output signal when there is rotor contact to body or covers and has a fail safe monitoring.

This type of system, like all others on the market can be susceptible to malfunction, this can be caused by a conductive product or pre-metal contaminated product passing through the valve and possibly making contact between rotor and casing. In either case this will result in a signal which depending on how the system has been integrated could cause the production process to be halted. To avoid this you have to program the PLC so that the output signal must be there for 1 or 2 seconds before giving a alarm.

Or as alternative use the Pepperl & Fuchs Isolated switch amplifier Type KFD2–DU–Ex1.D where you can program a delay.

Connection to end-cover/body and rotor contact point



Pepperl & Fuchs Isolated switch amplifier
 Type KFD2–SR2–Ex1.W.LB

Technische wijzigingen voorbehouden.
 Technical modifications are possible.
 Technische Änderungen vorbehalten.
 Changements d'exécutions techniques réservés.

